REMARKS / ARGUMENTS

I. General Remarks

Please consider the application in view of the following remarks. Applicants thank the Examiner for her careful consideration of this application, including the references that Applicants have submitted in this case and, pursuant to Manual of Patent Examining Procedure ("MPEP") § 609.02, all references submitted in the patent applications to which this application claims priority under 35 U.S.C. § 120.

II. Disposition of Claims

Claims 7-19 are pending in this application. Claims 7-19 are rejected. Claims 7, 11, 14, and 17 have been amended herein. Applicants respectfully request reconsideration in light of the remarks contained herein. These amendments are supported by the specification as filed. Applicants respectfully request that the above amendments be entered and further request reconsideration in light of the amendments and remarks contained herein.

III. Remarks Regarding the Specification

With respect to the specification, the Office Action states:

The disclosure is objected to because of the following informalities: a phrase "polyesters; poly(orthoesters); aliphatic polyesters" in P20 of the specification as originally filed seems to be incorrect because aliphatic polyesters are also polyesters. Appropriate correction is required.

(Office Action at 2.) Applicants respectfully disagree with this objection, it would not be incorrect to list both of these as suitable acid-releasing degradable materials. Applicants respectfully submit that because suitable acid-releasing degradable materials may include both polyesters and aliphatic polyesters it was appropriate to list both of these as suitable materials. Because, "[t]he fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facte* case of obviousness," MPEP § 2144.08 II, Applicants believed it was appropriate to list both polyesters and aliphatic polyesters in the specification. Therefore, Applicants respectfully assert that the specification as originally filed is correct and request the withdrawal of this objection.

IV. Rejections of Claims under 35 U.S.C. § 112

Claims 7-19 stand rejected under 35 U.S.C. § 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to this rejection, the Office Action states:

Claim 7 recites a phrase "with the proviso that the acidreleasing degradable material is not polyester", which renders the claim indefinite because it contradicts claim 11 reciting that the acid-releasing degradable material of claim 7 comprises an aliphatic <u>polyester</u>. For examining purposes the phrase was interpreted as "with the proviso that the acid-releasing degradable material is not alicyclic or aromatic polyester", since it is well known in the art that generally polyesters include aliphatic, alicyclic and aromatic polyesters.

(Office Action at 3.) Applicants have amended dependent claims 11 and 17 to remove the phrase "aliphatic polyester" from the markush groupings. Thus, Applicants respectfully submit that both claim 7 and claim 14 are not indefinite and respectfully request the withdrawal of this rejection.

V. Rejection of Claims under 35 U.S.C. § 103

A. Rejections Over Nguyen et al.

Claim 7-19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,209,643 issued to Nguyen *et al.* (hereinafter "Nguyen"). With respect to this rejection, the Office Action states:

Nguven et al disclose a method of introducing treatment chemicals and treating a subterranean formation comprising providing a fluid suspension including a mixture of particulate material such as gravel packing material (See column 8, lines 20-21) in said fluid suspension, a solution of a tackifying compound in a solvent (See column 5, lines 10-13) such as alcohol (See column 4, lines 55-56) and a treatment chemical whereby the treatment chemical is contacted by said tackifying compound and at least partially coated therewith whereby the tackifying compound retards release of said treatment chemical in said fluid suspension: and depositing the coated particulates in the subterranean formation whereby coated treatment chemical is subsequently released within the subterranean formation (i.e. the tackifying compound is degradable) to treat at the portion of formation in contact therewith (See column 12, lines 33-55). The tackifying compound includes any compound (see column 5, lines 11-12), e.g. a polamide (See column 5, lines 21-23) or polyesters, polyethers and polycarbamates, polycarbonates, styrene-butadiene latticies, natural or synthetic resins such as shellac and the like (See column 6, lines 9-14); and the treatment chemical include gel

breakers such as oxidizers, enzymes or hydrolyzable esters that are capable of producing a <u>pH change</u> in the fluid (See column 4, lines 40-42). The tackifying compound is admixed in an amount of <u>0.1-3.0 %</u> by weight of the coated particles (See Example 1; column 9, line 65 to column 10. line 5).

As to aliphatic polyester of claim 7, the Examiner takes official notice that it is a common knowledge in the art that generally polyesters include aliphatic, alicyclic and aromatic polyesters. Since Nguyen et al do not limit their teaching to particular polyesters, "polyesters" of Nguyen et al cover any polyester including aliphatic, alicyclic and aromatic polyesters. Therefore, it would have been obvious to one of ordinary skill in the art to have used aliphatic polyesters, as required by claim 7.

The Examiner takes official notice that the aliphatic polyester in a coated gravel of Nguyen et al is claimed acid-releasing degradable material which degrades a filter cake by slowly releasing acid when formed as gravel pack next to the filter cake because the method of Nguyen et al is substantially identical to that of claimed process. The Examiner also takes official notice that a mixture of the aliphatic polyester and the hydrolyzable ester of Nguyen et al also reads on claimed acid-releasing degradable material because claim 7 recites that the acid-releasing degradable material may be any acid-releasing combination of compounds.

As to claimed solvent of claim 12, obviously, one of ordinary skill in the art would use a conventional alcohol such a methanol and isopropanol as a solvent in Nguyen et al because Nguyen et al does not limit their teaching to particular alcohols.

(Office Action at 3-5). Applicants respectfully disagree.

At the outset, Applicants note that while the Office Action states that "Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al.," Applicants believe the Examiner intended to state that claims 7-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nguyen.

In order to form a basis for a rejection under 35 U.S.C. § 103(a), a prior art reference or combination of references must teach or suggest each and every element as set forth in the claim. MPEP § 2143.03. Applicants respectfully assert that the Examiner has failed to demonstrate that Nguyen teaches or suggests each element of independent claims 7 and 14.

First, the Office Action states that "Nguyen fails to teach that a combination of tackifying compound and hydrolyzable esters is capable of gel breaking by releasing acid by hydrolyzable esters" and that "Nguyen et al. fail to teach that the treatment chemical that releases acid can be used as a gel breaker to degrade a filter cake." (Office Action at 6, 7.) Applicants are unclear on how *Nguyen* can obviate Applicants' claims 7-19 when the Examiner explicitly points out these deficiencies of *Nguyen*.

Second, Applicants respectfully submit that Nguyen fails to teach, suggest, or disclose coating a particulate or gravel with an acid-releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester, and a solvent or a plasticizer as required by independent claims 7 and 14. Although Nguyen teaches particulates that are coated with a "liquid or solution of a tackifying compound, which coats at least a portion of the particulate upon admixture therewith," (Nguyen at col. 3, lines 41-43), Applicants respectfully submit that this tackifying compound is not the acid-releasing degradable material recited in independent claims 7 and 14. The Examiner cites to col. 6, lines 9-14 to demonstrate that Nguyen teaches the use of polyesters tackifying compounds. (See Office Action at 4.) This teaching is insufficient to obviate these claims because Applicants have specifically excluded polyester from independent claims 7 and 14 by proviso and, as mentioned above in Section IV, have amended claims 11 and 17 to delete the term "aliphatic polyester." Therefore, Nguyen is inapposite because it fails to teach, suggest, or disclose coating a particulate or gravel with an acid releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester.

Third, to the extent Nguyen may teach a treatment chemical that comprises a hydrolyzable ester, Applicants respectfully submit that the treatment chemical containing particles of Nguyen are not coated onto a particulate, but are rather adhered to the tackifying compound which is coated onto a particulate. (See Nguyen at col. 4, lines 57-60). To the extent Nguyen may teach treatment chemical coated particles adhering to particulates coated with a tackifying compound, Applicants respectfully submit that the Examiner has not demonstrated that Nguyen teaches combining the treatment chemical with a solvent or plasticizer to coat the particles. As such, neither the adhesion of the treatment chemical containing particles to the particulates coated with a tackifying agent, nor the treatment chemical coated particles themselves, teach, suggest, or disclose coating a particulate or gravel with an acid releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester, and a solvent or a plasticizer.

Fourth, Applicants respectfully submit that the Examiner has failed to establish that Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel, as required by independent claims 7 and 14. Applicants respectfully note that in this rejection, the Examiner has not even alleged that Nguyen teaches this limitation. See Office Action at ¶ 5. Although the Examiner makes this allegation in a later rejection, Applicants respectfully submit that this allegation is insufficient to demonstrate that Nguyen teaches on-the-fly coating. See Office Action at ¶ 6. The portions of Nguyen cited by the Examiner in support for this allegation teach that the cost of resin-coated proppant is high (See Nguyen, col. 2, lines 16-20), tackifying compounds can be in a solvent solution (See Nguyen, col. 5, lines 10-13), and an alcohol may be used as a solvent. See Nguyen, col. 5, lines 55-56. Applicants note that while the Office Action does not cite to col. 5, lines 55-56, it is Applicants' belief that this is the portion the Examiner had intended to cite. Applicants respectfully submit that the facts that the cost of resin-coated proppant is high, and that tackifying compounds can be dissolved in a solvent solution, such as alcohol, are insufficient to demonstrate the Nguyen teaches on-the-fly coating. Applicants have defined on-the-fly coating to mean that one flowing stream is continuously introduced into another flowing stream so that the streams are combined and mixed while continuing to flow as a single stream as part of the on-going treatment at the job site. See Specification ¶ [0025]. Although the method of Nguyen may lend itself to on-the-fly coating, the Examiner has failed to demonstrate that Nguyen teaches such operations. As such, the Examiner has failed to establish that Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-they-fly to create coated particulates or gravel. In addition, no motivation or other apparent reason known to a person of skill in the art has been provided to modify the cited references to produce the claimed invention. See KSR International Co. v. Teleflex, Inc., 550 U.S. (2007) (slip op., at 14). If the Examiner is relying on some other section of Nguyen to teach this limitation, Applicants respectfully request the Examiner identify that section.

Thus because the Examiner has failed to demonstrate that Nguyen teaches, suggests, or discloses all of the elements of independent claims 7 and 14, Nguyen cannot obviate claims 7 and 14. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 8-13 and 15-19 depend, directly or indirectly, from claim 7 or 14, these dependent claims each include the limitations of

claims 7 and 14 that the Examiner has failed to demonstrate that *Nguyen* teaches, suggests, or discloses. *See* 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 7-19 are allowable over *Nguyen* and respectfully request the withdrawal of these rejections.

B. Rejections Over Applicants' Admitted State of Art in View of Nguyen et al.

Claims 7-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted state of the art (ASA) in view of *Nguyen*. With respect to this rejection, the Office Action states:

Applicants admit that it has been found that acid-releasing degradable material may be coated onto a particulate and act at a delayed rate to produce acid such that the particulate may be placed in the subterranean formation adjacent to the filter cake before a substantial amount of acid is released (See the Applicants' specification, P9). In such methods known in the art, the acid-releasing degradable material had to be coated onto the particulate in a controlled environment off-site from the well head, stored, and transported before it could be used in a subterranean formation (See the Applicants' specification, P9). In other words, Applicants admit that it was not known to coat the acid-releasing degradable material onto a particulate on-the-fly.

However, Nguyen et al teach that it was known to use resin-coated particles produced at high cost (in advance) for treating a subterranean formation (See column 2, lines 16-20). However, it is advantageous to use a particulate coated with a resin based treatment material by mixing the particulate with a solution of a resin based treatment material (claimed coating on-the-fly) in a solvent (See column 5, lines 10-13) such alcohol (See column 4, lines 55-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have coated acid-releasing degradable material onto a particulate in ASA on-the-fly by mixing the particulate with a solution of acid-releasing degradable material in alcohol instead of coating it onto a particulate in advance since Nguyen et al teach that it is advantageous to use a particulate coated with a solution of a resin based treatment material on-the-fly.

All other limitations would be obvious for the reasons discussed above.

(Office Action at 5-6.) Applicants respectfully disagree.

To form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim in such a way that enables a person of ordinary skill in the art to make or use the claimed invention. MPEP §§ 2141.01(II), 2142 (2004). Applicants respectfully assert that the combination of Applicants' ASA and *Nguyen* is insufficient to teach or suggest each element of independent claims 7 and 14.

First, Applicants respectfully submit that the portion of Applicants' specification cited by the Examiner may not be used as prior art. "Where the specification identifies work done by another as 'prior art,' the subject matter so identified is treated as admitted prior art." MPEP § 2129(II) (citing *In re Nomiya*, 509 F.2d 566, 571, 184 USPQ 607, 611 (CCPA 1975)). Applicants have not identified the subject matter listed in paragraph [0009] of the specification as work done by another, nor have they classified the subject matter as prior art. Rather, Applicants merely state:

More recently, it has been found that acid-releasing degradable material may be coated onto a particulate and act at a delayed rate to produce acid such that the particulate may be placed in the subterranean formation adjacent to the filter cake before a substantial amount of acid is released. In such methods known in the art, the acid-releasing degradable material had to be coated onto the methods in a controlled environment off-site from the well head.

Specification at ¶ [0009]. Thus because Applicants have not identified this subject matter as work done by another, nor have they classified it as prior art, Applicants respectfully submit that it is improper to use this portion of the specification as prior art. As such, Applicants respectfully request to withdrawal of this rejection.

Second, Applicants respectfully submit that the Examiner has failed to demonstrate that the combination of Applicants' ASA and Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel, as required by independent claims 7 and 14. Applicants' specification at paragraph [0009] fails to teach this limitation. Rather, the Examiner is relying on Nguyen to teach this limitation. See Office Action at 5. However, as discussed above in Section V (A), the Examiner has failed to demonstrate the Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-they-fly to create coated particulates or gravel. In addition, no motivation or other apparent reason known to a person of skill in the art has been provided to modify the cited references to produce the claimed invention. See KSR International Co. v. Teleflex, Inc., 550 U.S. (2007) (slip op., at 14). As such, the Examiner has failed to establish that the combination of Applicants' ASA and Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-they-fly to create coated particulates or gravel.

Thus, because the Examiner has failed to demonstrate that the combination of Applicants' ASA and Nguyen teaches, suggests, or discloses all of the elements of independent claims 7 and 14, the combination of Applicants' ASA and Nguyen cannot obviate claims 7 and 14. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 8-13 and 15-19 depend, directly or indirectly, from claim 7 or 14, these dependent claims each include the limitations of claims 7 and 14 that the Examiner has failed to demonstrate that the combination of Applicants' ASA and Nguyen teaches, suggests, or discloses. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 7-19 are allowable over the combination of Applicants' ASA and Nguyen and respectfully request the withdrawal of these rejections.

C. Rejections Over Nguyen et al. in View of Free et al.

Claims 7-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nguyen in view of U.S. Patent No. 3,960,736 issued to Free et al. (hereinafter "Free"). With respect to this rejection, the Office Action states:

Nguyen et al are applied here for the same reasons as above. The Examiner takes official notice that a mixture of the aliphatic polyester and the hydrolyzable ester of Nguyen et al also reads on claimed acid-releasing degradable material because claim 7 recites that the acid-releasing degradable material may be any acid-releasing combination of compounds.

Nguyen et al fail to teach that a combination of tackifying compound and hydrolyzable esters is capable of gel breaking by releasing acid by hydrolyzable esters.

Free et al teach that an organic <u>ester</u> why hydrolyzes over a certain period of time to <u>release an acid</u> may be used as a breaker of a viscous aqueous solution for the use as a fracturing fluid, as a drilling fluid (See column 1, lines 36-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a hydrolysable ester that releases an acid as a breaker chemical in the combination of tackifying compound and hydrolyzable esters of Nguyen et al since Free et al teach that an organic ester which hydrolyzes over a certain period of time to release an acid is suitable for the use as a breaker of a viscous acueous fracturing fluid, or a drilling fluid.

All other limitations would be obvious for the reasons discussed above.

(Office Action at 6.) Applicants respectfully disagree.

As discussed above in Section V (A), the Examiner has failed to demonstrate that Nguyen teaches, suggests, or discloses coating a particulate or gravel with an acid-releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester, and a solvent or a plasticizer and has also failed to demonstrate that Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel. Nor does Free teach these elements. Rather, the Examiner merely relies on Free's alleged teaching that an organic ester which hydrolyzes over a certain time period to release an acid may be used as a breaker of a viscous aqueous solution for the use as a fracturing fluid, as a drilling fluid. (See Office Action at 6.) In addition, no motivation or other apparent reason known to a person of skill in the art has been provided to modify the cited references to produce the claimed invention. See KSR International Co. v. Teleflex, Inc., 550 U.S. ____ (2007) (slip op., at 14). Therefore, one of ordinary skill in the art would not understand from these references, either alone or in combination, to make or use particulates or gravel coated with a coating solution comprising an acid-releasing degradable material, with the proviso that the acidreleasing degradable material is not polyester, and a solvent or a plasticizer, or coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel, as required in independent claims 7 and 14.

Thus because the Examiner has failed to demonstrate that the combination of Nguyen and Free teaches, suggests, or discloses all elements of claims 7 and 14 the combination cannot obviate claims 7 and 14. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 8-13 and 15-19 depend, directly or indirectly, from claim 7 or 14, these dependent claims each include the limitations of claims 7 and 14 that the Examiner has failed to demonstrate that the combination of Nguyen and Free teaches, suggests, or discloses. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 7-19 are allowable over the combination of Nguyen and Free, and respectfully request the withdrawal of these rejections.

D. Rejections over Nguyen et al. in View of Lee et al.

Claims 7-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nguyen in view of U.S. Patent No. 6,817,414 issued to Lee et al. (hereinafter "Lee"). With respect to this rejection, the Office Action states:

Nguven et al are applied here for the same reasons as

above. Nguyen et al fail to teach that the treatment chemical that releases acid can be used as a gel breaker to degrade a filer cake.

Lee et al teach that gravel having coating comprising chemicals that slowly hydrolyze and release an acidic by-product (See column 3, lines 6-15), e.g. lactic polymer (See column 3, lines 20-28) can be used to degrade a filter cake (See column 2, lines 52-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used acid releasing treatment chemicals in coated gravel of Nguyen et al for degrading a filter cake since Lee et al teach that chemicals that slowly hydrolyze and release an acidic by-product are suitable to be used to degrade a filter cake; and Nguyen et al don not limit their teaching to particular gel breakers.

All other limitations would be obvious for the reasons discussed above.

(Office Action at 6-7) Applicants respectfully disagree.

As discussed above in Section V (A), the Examiner has failed to demonstrate that Nguyen teaches, suggests, or discloses coating a particulate or gravel with an acid-releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester, and a solvent or a plasticizer and has also failed to demonstrate that Nguyen teaches, suggests, or discloses coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel. Nor does Lee teach these elements. Rather, the Examiner merely relies on Lee's alleged teaching that gravel having coating comprising chemicals that slowly hydrolyze and release an acidic by-product can be used to degrade a filter cake. (See Office Action at 7.) Therefore, one of ordinary skill in the art would not understand from these references, either alone or in combination, to make or use particulates or gravel coated with a coating solution comprising an acid-releasing degradable material, with the proviso that the acid-releasing degradable material is not polyester, and a solvent or a plasticizer, or coating the coating solution onto a particulate or gravel on-the-fly to create coated particulates or gravel, as required in independent claims 7 and 14.

Thus because the Examiner has failed to demonstrate that the combination of Nguyen and Lee teaches, suggests, or discloses all elements of claims 7 and 14 the combination cannot obviate claims 7 and 14. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 8-13 and 15-19 depend, directly or indirectly, from claim 7 or 14, these dependent claims each include the limitations of claims 7 and 14 that the Examiner has failed to demonstrate that the combination of Nguyen and Lee teaches, suggests, or discloses. See 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claims 7-19 are allowable over the combination of Nguyen and Lee, and respectfully request the withdrawal of these rejections.

Furthermore, the Examiner has failed to establish a prima facie case of obviousness with respect to the combination of Nguyen and Lee. A prima facie case of obviousness based on a combination of references requires a suggestion or motivation in the prior art references to make the specific combination of elements claimed by Applicants. MPEP § 2143.01. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP § 2143.01. In the present case, the Examiner has not sufficiently established that it would have been obvious to one of ordinary skill in the art to combine the Lee reference with the Nguyen reference. The method in Lee does not lend itself for on-the-fly operations. (See Lee at col. 3, lines 56 - col. 4, line 11). In order for an acid-releasing degradable material to be suitable for on-the-fly coating onto a particulate, it must be in a substantially liquid, flowable form. Thus it would be improper to combine this reference with Nguyen which does lend itself for on-the-fly operations. (See Nguyen at col. 5, lines 10-13). For at least these reasons any rejections based on Lee in combination with Nguyen is improper. Accordingly, Applicants request that any rejections of Applicants' claims over Lee in combination with Nguyen be withdrawn.

VI. No Waiver.

All of Applicants' arguments and amendments are without prejudice or disclaimer. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicant are sufficient to overcome the anticipation rejection.

SUMMARY

In light of the above remarks, Applicants respectfully submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that no other fees are due in association with the filing of this Response. However, should the Commissioner deem that any additional fees are due, including any fees for extensions of time, the Commissioner is authorized to debit Baker Botts L.L.P. Deposit Account No. 02-0383, Order No. 063718.1357, for any underpayment of fees that may be due in association with this filing.

Date: April 17, 2008

Respectfully submitted,

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